MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

INTEROFFICE COMMUNICATION

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March 29, 2004

TO: Lishba Varughese
Southeast Michigan District Office
Water Division

FROM: Tamara Lipsey
Surface Water Quality Assessment Section
Water Division

SUBJECT: Dutton Cooperate Center (formerly Sanicem Landfill)
Sample Analytical Results Review

Following your March 2, 2004, request we have reviewed samples taken from the future site of the Dutton Cooperate Center, located near Auburn Hills, Michigan, in Oakland County. It is our understanding that a leachate is coming from a construction site located on property that was previously the site of an unregulated landfill (Sanicem Landfill), and that the leachate is flowing into adjacent wetlands. The Department of Environmental Quality (DEQ) personnel took samples of the leachate, of the wetland, and from Galloway Ditch upstream and downstream of the location where the leachate would most likely enter the ditch via the wetlands. The parameters listed below in Table 1 are those that were both detected and exceed Michigan Ambient Water Quality Standards (WQS). The WQS and the DEQ laboratory analytical results for each sample taken are included in Table 1 for comparison.

In addition to the parameters listed in Table 1, analytical results at all four sampling sites indicate that total dissolved solids concentrations were at levels that exceed WQS and ammonia concentrations exceeded average concentrations for water bodies in southeast Michigan. The leachate and wetland samples contained Carbonaceous Biochemical Oxygen Demand ($CBOD_5$) and Biochemical Oxygen Demand (BOD) concentrations that were considerably elevated and comparable to raw municipal sewage. Concentrations of these parameters in the downstream sample indicate that $CBOD_5$ and BOD remained at levels that exceed typical concentrations of unpolluted streams in southeast Michigan. Table 2 lists the conventional pollutants that were detected at the four sampling sites.

Table 1. Sample analytical results and Michigan Water Quality Standards (WQS). All units are in micrograms per liter (µg/L) unless otherwise stated.

Compound	CAS #	Upstream	Leachate	Wetland	1.5 miles Downstream	WQS	QL
1,2,4-Trimethylbenzene	95636	ND	[redacted]	4.1	ND	[redacted]	1
2-Methylnaphthalene	91576	ND	[redacted]	ND	ND	[redacted]	5
Arochlor 1242	53469-21-9	ND	[redacted]	[redacted]	ND	[redacted]	0.1
Arochlor 1254	11097-69-1	ND	[redacted]	[redacted]	ND	[redacted]	0.1
Boron	7440428	ND	[redacted]	1800	130	[redacted]	20
Chrysene	218019	ND	ND	ND	[redacted]	[redacted]	1
Cyanide	57125	ND	0.006	0.006	0.011	5.2	0.005
Ethylbenzene	100414	ND	[redacted]	3.3	ND	[redacted]	1
Fluoroanthene	206440	ND	ND	ND	[redacted]	[redacted]	1
Lead	7439921	ND	[redacted]	[redacted]	12	[redacted]	1
Mercury	7439976	ND	ND	[redacted]	ND	[redacted]	0.2
Naphthalene	91203	ND	[redacted]	ND	ND	[redacted]	5
Nickel	7440020	7.9	[redacted]	130	18	[redacted]	2
o-Xylene + m & p-Xylene	1330207	ND	[redacted]	13.4	ND	[redacted]	2
Phenanthrene	85018	ND	[redacted]	ND	[redacted]	[redacted]	1
p-Isopropyl toluene	99876	ND	[redacted]	2.5	ND	[redacted]	1
p-tert-butyl-Benzoic acid		ND	ND	[redacted]	ND	7.2	NA
Pyrene	129000	ND	ND	ND	[redacted]	[redacted]	1
Selenium	7782492	ND	[redacted]	[redacted]	2.1	[redacted]	1
Total Phosphorus (mg/L)		0.02	[redacted]	[redacted]	0.15	[redacted]	0.01

Table 2. Sample analytical results for conventional pollutants.

Conventionals	Upstream	Leachate	Wetland	1.5 miles Downstream	QL
$CBOD_5$ (mg/L)	ND	100	63	8	[redacted]
BOD (mg/L)	ND	130	70	10	[redacted]
Ammonia (mg N/L)	0.85	520	290	16	[redacted]
TDS (mg/L)	890	5800	4000	2300	[redacted]

mg/L = milligrams per liter
mg N/L = milligrams of nitrogen per liter
ND = Not detected at quantification level of test
NA = Not available due to this being a tentatively identified compound and the concentration is estimated
QL = Quantification level of test
Shaded area is where exceedance of WQS occurs

Please feel free to contact me at 517-335-1058 if you have questions or comments regarding this matter.

tl:rm

cc: Mary Vanderlaan, Southeast Michigan District Office, GLMD
Sylvia Heaton/Brenda Sayles/Facility File, SWQAS, WD